

Delivering Capital Projects: A Young Professional's Guide to Specification Writing

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Spencer Adams

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Welcome!

Learning Objectives

1. There's no industry standards, just write specs however you want.
2. Spec writing is easy and quick, no need to plan ahead.
3. If your specs are terrible, no one will care.

Specifications

“ Nowhere is the ability to express his thoughts in clear and forcible English more necessary to an Engineer than in the preparation of his specifications. ”

— Richard Kirby, *The Elements of Specification Writing*, 1913



specification (n.)

1610s, Latin, "act of investing with some quality,"

1833, meaning "technical particular"

1956, short form "spec" first used

Source: <https://www.etymonline.com/word/specification>

Project Delivery Method



The method of specifying depends on the project delivery method.

What are Specifications? (For today's context)



"Division 00"
"Project Manual"
Procurement Requirements
Contract Forms
Conditions of the Contract

vs



"Divisions 01 through 49"
"Technical Specifications"
Qualitative Requirements
Description of Work Results

Industry Organizations Publishing Standards



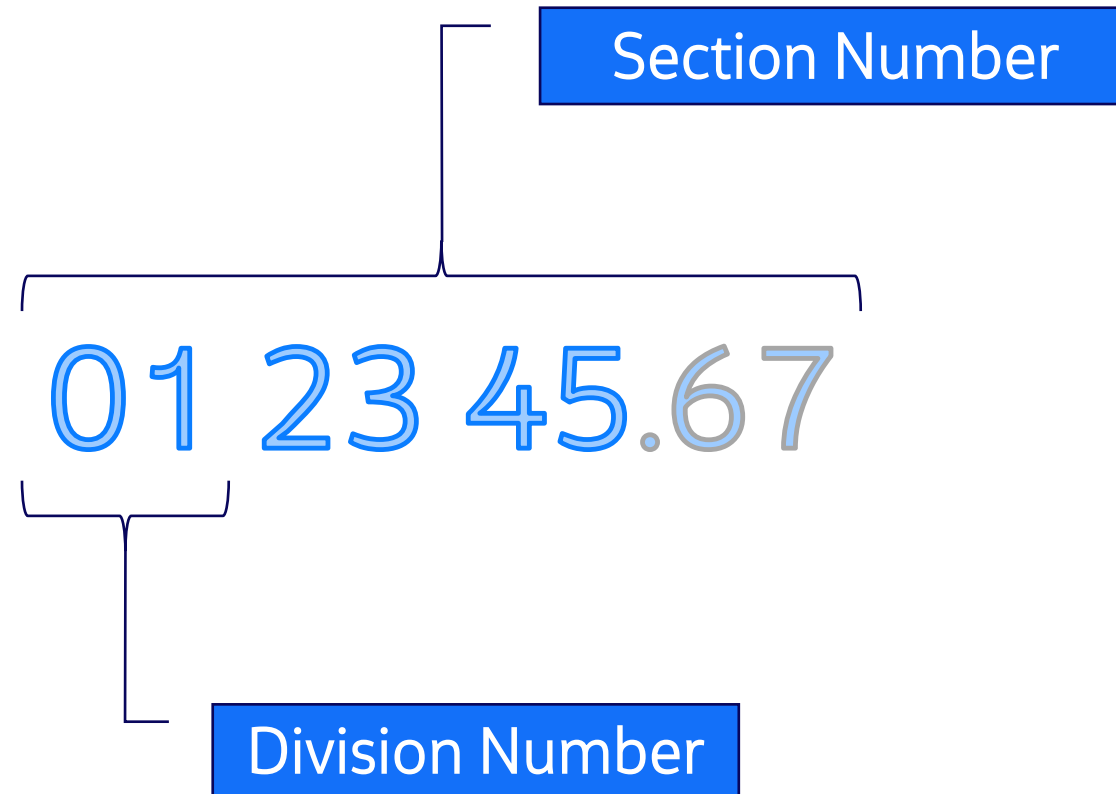
CSI MasterFormat

“ If you need to decide where to put something, the only question is:
If I needed it right now, where would I look for it? ”

— Adam Savage



CSI MasterFormat – “The 6-Digit Numbering Scheme”



CSI MasterFormat – Divisions

Division	Description
00	Procurement and Contracting Requirements
01	General Requirements
02 - 14	Facility Construction Subgroup
21 - 28	Facility Services Subgroup
31 - 35	Site and Infrastructure Subgroup
40 - 48	Process Equipment Subgroup

Methods of Specifying

- Descriptive – Open-ended Results
- Performance – Defined Results
- Proprietary
 - Closed Proprietary (Sole Source)
 - Open Proprietary (with substitutions)
- Reference Standard
 - (we use them, but don't write them)

Types of Specifications

- Sheet Specifications
- Short-Form Specifications
- Long-Form Specifications

Long-Form Specifications

- CSI MasterFormat
- CSI SectionFormat
 - PART 1 – GENERAL
 - PART 2 – PRODUCTS
 - PART 3 – EXECUTION
- CSI PageFormat
 - Standardized format for readability, publish-ability, and adaptability
 - Article, Paragraph, Subparagraph

CSI SectionFormat

PART 1 – GENERAL	<ul style="list-style-type: none">• Administrative and procedural requirements• Expands on Division 1 with information unique to this section
PART 2 – PRODUCTS	<ul style="list-style-type: none">• Systems, assemblies, equipment, products, materials, fabrications
PART 3 – EXECUTION	<ul style="list-style-type: none">• Field installation• Preparatory and post-installation activities

Good Spec Writing

“ Nowhere is the ability to express his thoughts in clear and forcible English more necessary to an Engineer than in the preparation of his specifications. ”

— Richard Kirby, *The Elements of Specification Writing*, 1913



Good Spec Writing Is

- Taking Ownership
- The Right Writing Style
- Well-Coordinated
- Knowing your Audience
- Putting in the Work

Taking Ownership

- Responsible Charge
- Designer-of-Record



The quickest way to starve a horse
is to assign two people to feed it.

— Unknown



Right Writing Style



The writing of specifications should be ... that the clauses are directions, not suggestions.

They should be as curt and definite as the orders of a military officer to his subordinates.

— The Engineer's Manual of English, 1943



Right Writing Style

- Spec writing is different than report writing
- Short, direct, incomplete sentences are OK
- If a word is unimportant, delete it
- Don't imply the subject
- No underlining, no bold, no italics
- If you can't measure it, it's difficult to enforce

Spec Writing in the Imperative Mood



"Contractor shall apply the paint to the wall."

VS



"Apply paint to wall."

Words to Avoid

- About
- All
- Any
- Should
- Such
- Could
- Please
- Must
- Very
- Extra
- Best
- Reasonably
- Approximately
- Ample
- Good
- Customary
- As allowed
- As appropriate
- As necessary
- As required
- As directed
- To the satisfaction of

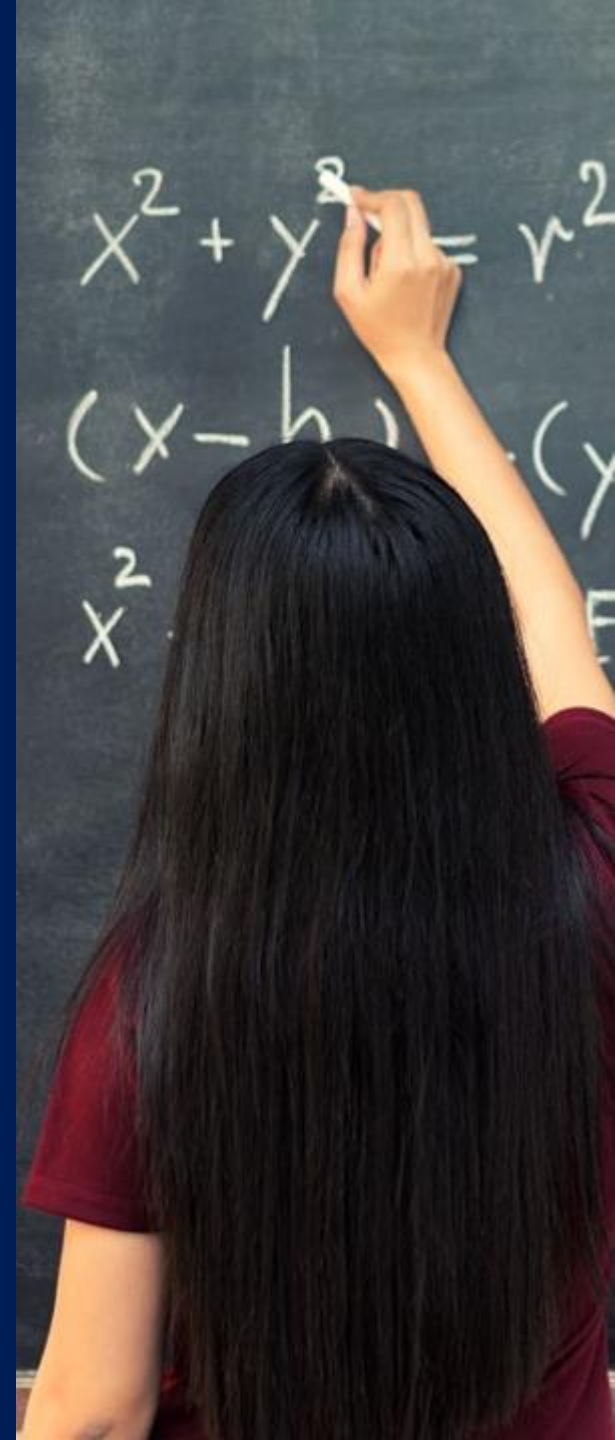
Well-Coordinated

- with Front-End Documents
 - General Conditions and Division 01 General Requirements govern the tech specs
- across Disciplines
 - Example: pumps and pump motors
- with the Drawings
 - Schedules and references
- with Vendors
 - Unique equipment
 - Sole-source procurements

Activity: Knowing Your Audience

“ The architect works on the job for a year,
the contractor gets a month to bid it,
and the drywall sub gets a morning.

— Mark Kalin, FAIA, FCSI, President of Kalin Associates ”



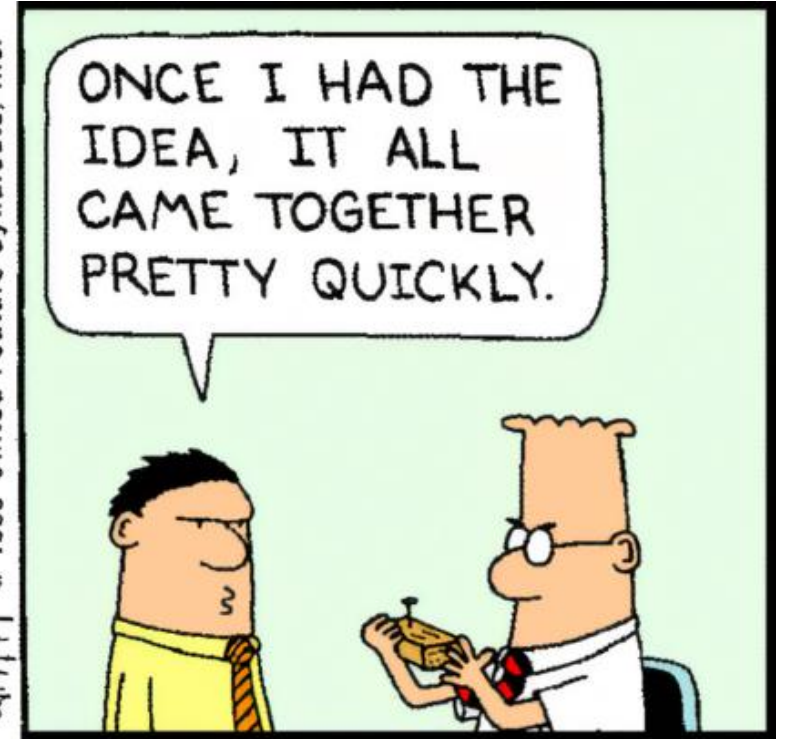
While you wait



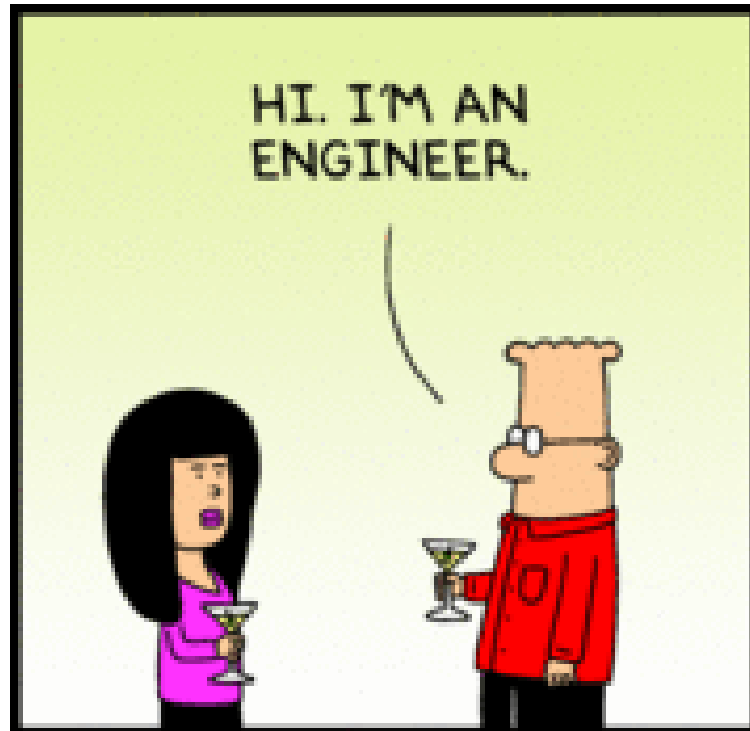
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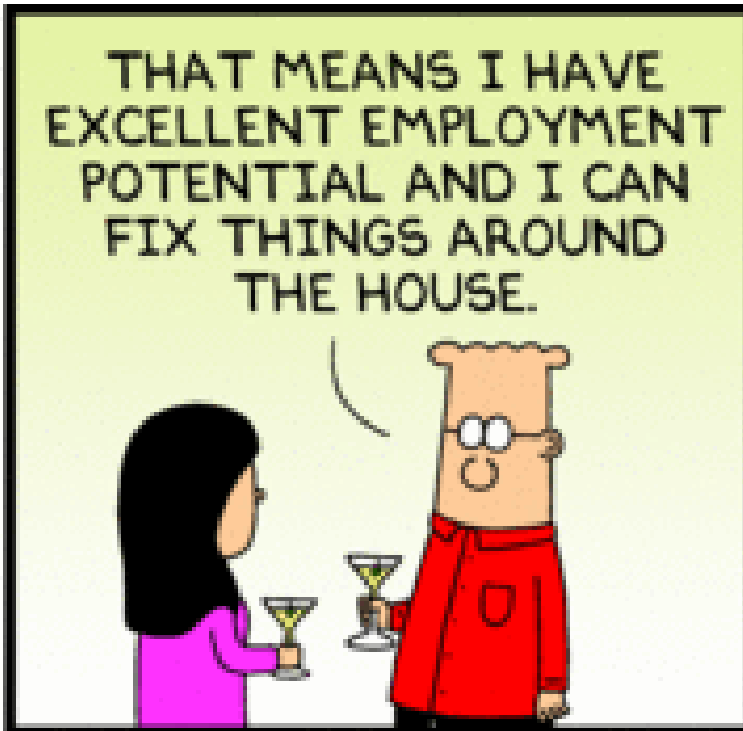
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While you keep waiting...



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Still waiting...



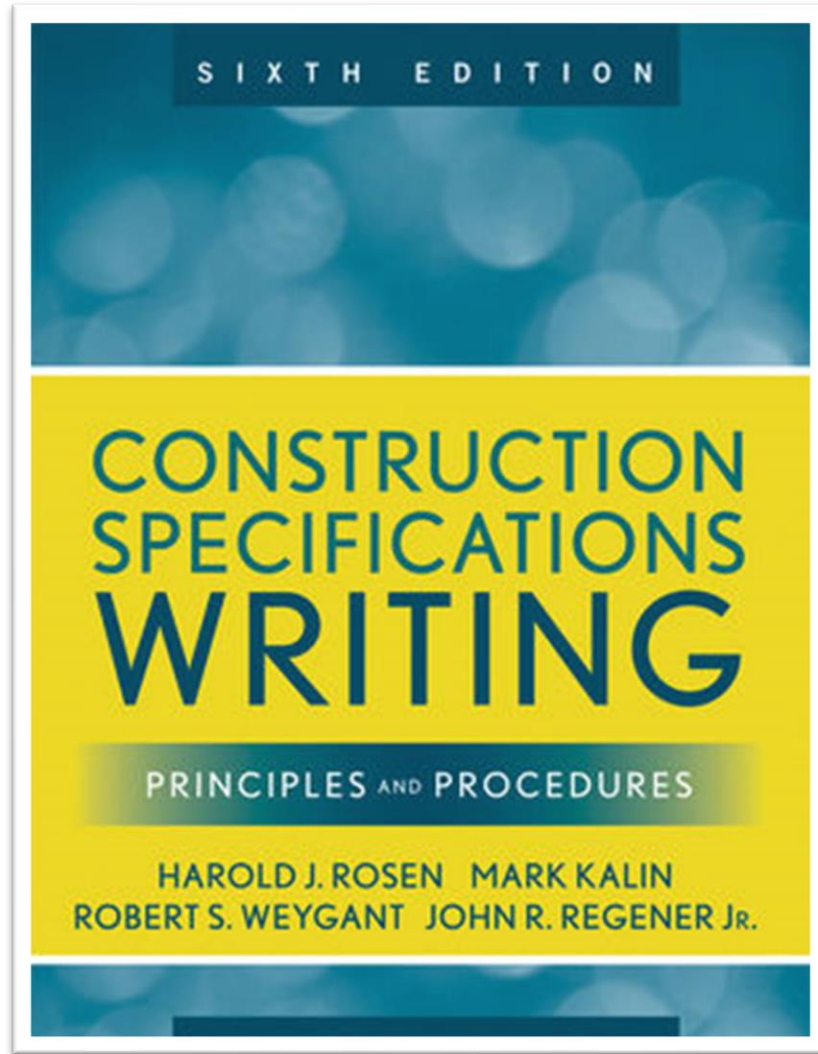
Activity Take-Aways

- Consider your audience
- If you confuse the reader, no one wins
- Coordination takes time, don't squander the design phase,

Putting in the Work

- Planning the Effort
 - Project Delivery Method?
 - Milestone Deliverables? 30%, 60%, 90%
- What's your Starting Point?
 - From Scratch
 - From "Office Master"
 - From Previous Project

Resources



Takeaways

- Industry resources for good spec writing
- Remember how it feels to use a bad spec
- There is no substitute for doing the work



Spencer Adams, PE
spencer.adams@jacobs.com
214-335-7810



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Reinventing tomorrow.



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